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Chimarrogalobia yoshiyukiae gen. n., sp. n. (Acarina, Myobiidae) Parasitic on *Chimarrogale* (Insectivora, Soricidae)

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ABSTRACT—*Chimarrogalobia* gen. n. is erected for the new mite, *Chimarrogalobia yoshiyukiae* sp. n. parasitic on *Chimarrogale himalayica platycephala*. The adult, larva deuto- and trito-nymphs are described and figured.

It is expected on the basis of available data that each genus of the family Soricidae is associated with myobiid mites of two different genera, one being represented by rounded and smaller forms that are rather conservative in speciation and the other by larger and multiplicate forms, and that information on the taxonomy of Soricidae can be deduced from a set of smaller and larger myobiids specific to a given genus or species of insectivores, although a larger portion of such mites is to be studied thoroughly [1]. A renewed study of Myobiidae infesting insectivores is carried on to record mites and their hosts and localities, conforming to the above anticipations.

Of the genera composing the subfamily Crocidurinae of the family Soricidae [2], *Nectogale*, *Crocidura*, *Diplomesodon*, *Suncus* and *Anowrosorex* already yielded respective mites of the genera represented by larger forms [1, 3]. The present paper deals with a new mite parasitic on *Chimarrogale*, the sixth genus of the subfamily Crocidurinae as hosts of mites of the family Myobiidae.

MATERIALS AND METHODS

Alcoholic specimens of *Chimarrogale himalayica platycephala* deposited in the collection of the National Science Museum, Tokyo, were examined for parasitic mites under the dissecting microscope, combing hair with forceps, usually at a magnification ×10.

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Chimarrogalobia gen. n.

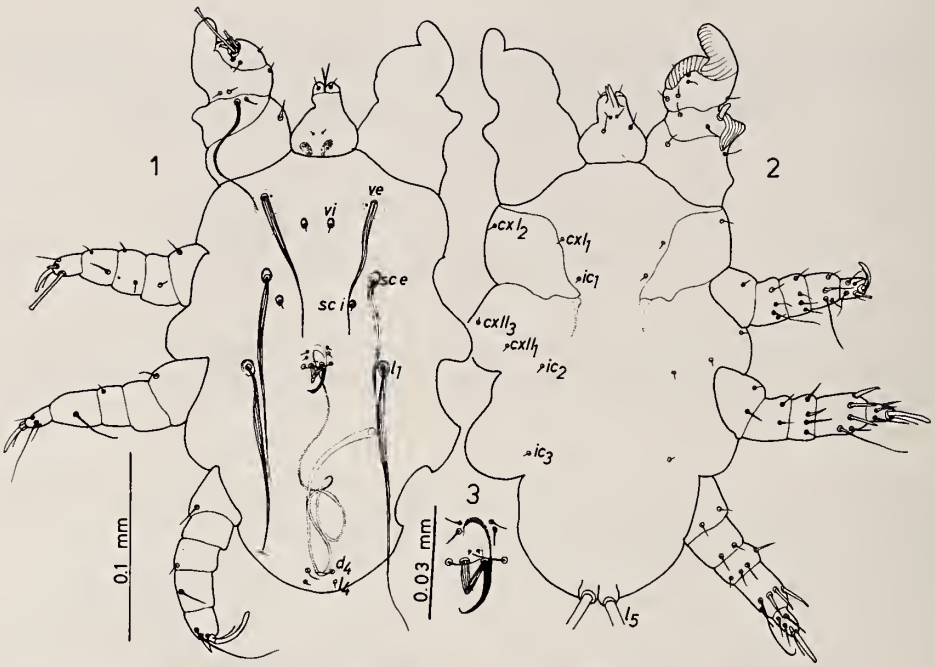
Idiosoma ovoid. Leg I consisting of trochanter, femur, genu and tibio-tarsus complex, and lacking claws; venter of tibio-tarsus complex (=tibia) entirely striated. Lags II–IV each bearing a strong claw and a very thin and seta-like one. Male idiosomal setae comprizing *ve*, *vi*, *sc e*, *sc i*, d_4 and l_4 dorsally, and ic_{1-3}, cxI_1, cxI_2, $cxII_3$ and l_5 ventrally. Male genital area bearing 5 pairs of genital setae and distinct penis sheath; penis long. Female propodosomal and ventral setae as in male, with additional genital setae g_2 and g_3 on venter; hysterosomal setae, d_1, d_2, d_4, l_1, l_3, l_4 and g_4.

Type species: *Chimarrogalobia yoshiyukiae* sp. n.

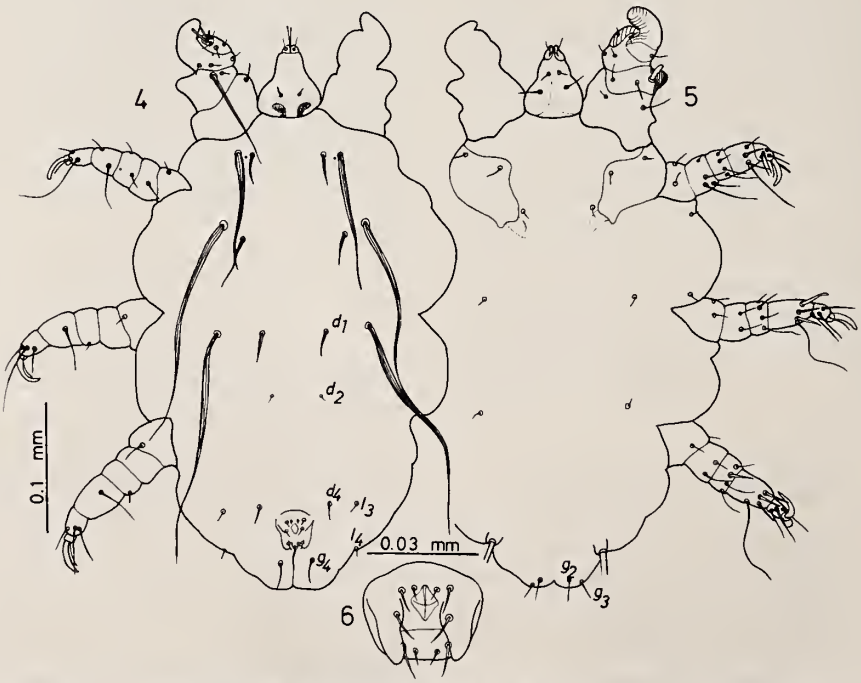
Chimarrogalobia yoshiyukiae sp. n.

(Japanese name: Kawanezumi-Ô-Kemochidani)

Male (Figs. 1–3): Measurements in μm for holotype. Body (gnathosoma and idiosoma) 272 long by 120 wide at a level between legs II and III. Setae *ve*, *sc e* and l_1 thick and long, gaining length in this order; *vi*, *sc i*, d_4 and l_4 minute, ranging from ca. 3 to 8 in length. Genital opening on basal level of setae l_1. Five pairs of genital setae: 2 pairs of fine setae anterior to genital opening; 2 pairs of conspicuous setae, measuring ca. 10 long, with external ones setiform and internals clavate and striated, almost on level of genital opening; paired



FIGS. 1–3. *Chimarrogalobia yoshiyukiae* gen. n., sp. n., male. 1–Dorsal view, 2–Ventral view, and 3–Genital region.



FIGS. 4–6. *Chimarrogalobia yoshiyukiae* gen. n., sp. n., female. 4–Dorsal view, 5–Ventral view, and 6–Genito-anal region.

FIGS. 7–12. *Chimarrogalobia yoshiyukiae* gen. n., sp. n., body and leg I of immature stages. 7–Larva, dorsum, 8–Larva, venter, 9–Deutonymph, dorsum, 10–Deutonymph, venter, 11–Tritonymph, dorsum, and 12–Tritonymph, venter.

vestigial setae antero-interiad from clavate and striated setae (Fig. 3). Penis sheath sclerotized and curved distally in length of ca. 22; penis long and coiled trebly. Leg I bulky; 80 long from base of trochanter to tip and 50 wide at level of trochanter. Leg chaetotaxy and setal nature as in Table 1 and Figures 1–2.

Female (Figs. 4–6): Measurements in μm for allotype and, in parentheses, for other 3 paratypes. Body 400 (410, 420, 430) long by 255 (260, 275, 260) wide at a level between legs II and III. Setae *ve*, *sc e* and l_1 long; *vi* ca. 30 (28, 30, 32) long; *sc i* 20 (23, 20, 20) long; d_1 23 (25, 33, 25) long; d_2 weak, 5 (7, −, 6) long; d_4 15 (11, 13, 13) long; l_3 7 (8, 8, 8) long; l_4 7 (6, 7, 8) long. Genito-anal region as in Figure 6; genital setae g_4 on dorsum and g_2 and g_3 on venter more conspicuous than d_2, l_3, l_4 and ventral setae on coxal regions II and III. Leg I 85 (87, 90, 88) long from base of trochanter to tip and 55 (55, 60, 58) wide at level of trochanter; leg chaetotaxy as in male.

Immature stages

Larva (Figs. 7–8): Outline elongate oval; length from tip of leg I to caudal end of idiosoma 265–250 (μm, n=2) and width at a level between legs II and III 150–138. Three pairs of setae, *ve*, *sc e* and *sc i*, dorsally on propodosoma and 6 pairs, d_1, d_2, d_3, d_5, l_1 and l_4 on hysterosoma. Ventral setae consisting of a single pair of *ic* series of setae, ic_1, and a pair of long caudal setae, l_5. Leg 4-segmented; leg chaetotaxy and nature of setae on leg I as in Table 1 and Figures 7 and 8.

Protonymph: No specimen was available, but a newly formed body with shell-form setae, cxI_1, and forth legs was seen through cuticle of the smaller specimen of the above two larvae. Thus, it is reasonable to remark that the protonymph is

TABLE 1. Leg chaetotaxy and, in parentheses, solenidiotaxy of *Chimarrogalobia yoshiyukiae* gen. n., sp. n.

leg	segment	larva	deutonymph	tritonymph	adult	
I	trochanter	—	—	—	—	
	femur	2	4	4	5	
	genu	5	6	6	8 (1)	
	tibo-tarsus	5 (1?)	5 (2)	5 (2)	8 (?)	
II	trochanter	—	1	1	2	
	femuro-genu	2 (1)	4 (1)	4 (1)	5	femur
					6 (1)	genu
	tibia	5	6	6	6	
	tarsus	6 (1)	6 (1)	6 (2)	6 (2)	
III	trochanter	—	1	1	3	
	femuro-genu	2	2	2	2	femur
					5	genu
	tibia	4	4	5	6	
	tarsus	6	6	6	6	
IV	trochanter		—	1	3	
	femuro-genu		—	2	2	femur
					5	genu
	tibia		4	5	6	
	tarsus		6	6	6	

octopodal, and that idiosomal setation and setal nature are the same as those of the deutonymph ventrally.

Deutonymph (Figs. 9–10): Regions between legs II and III expanded; length 290, 310, 240, 270, 238 (μm, n=5) and width at level between legs II and III 200, 190, 160, 162, 150. Dorsal setae on idiosoma consisting of *ve*, *sc e*, *sc i*, d_5, l_1 and l_4; setal nature as in Figure 9; setae ic_1, shell-form cxI_1, ic_2 and l_5 on venter. Leg segments as in larva; leg chaetotaxy and setal nature on leg I as in Table 1 and Figures 9 and 10.

Tritonymph (Figs. 11–12): Outline as in deutonymph; length 420–310 (μm, n=2) and width at level between legs II and III 300–190. Dorsal setae on propodosoma as in deutonymph, and a single pair of setae, l_1, on hysterosoma. Setae ic_{1-3}, shell-form cxI_{1-2}, $cxII_1$ and l_5 ventrally on idiosoma. Leg segments as in larva; leg chaetotaxy and setal nature on leg I as in Table 1 and Figures 11 and 12.

Material examined: Holotype male, allotype female, 3 paratype females, an aberrant female, 2 tritonymphs, 5 deutonymphs and 2 larvae ex *Chimarrogale himalayica platycephala*, Kyoto, Japan, 19-VIII-1984.

The holotype, allotype and another paratype are deposited in the collection of the National Science Museum, Tokyo, with the registration Nos. NSMT Ac-9711, -2 and -3, respectively, and all the other specimens in the collection of the author.

DISCUSSION

Chimarrogalobia gen. n. is allied to the genera *Placomyobia* Jameson and *Gymnomyobia* Fain *et* Lukoschus associated with *Anourosorex* and *Nectogale*, respectively, of the subfamily Crocidrinae in having the male genitalia, inclusive of genital setae, of the same type. These three genera are separated from one another by the difference in dorsal setation on the female hysterosoma; d_1, d_2, d_4, l_1, l_3, l_4 present in *Chimarrogalobia*; d_4, l_1 and l_4 in *Placomyobia*, although d_4 and l_4 are missing in the original description (Jameson, 1970, fig. 2A [4]); and only long d_1 and l_1 in *Grymnomyobia* (Fain and Lukoschus, 1976, fig. 69 [3]). The genera *Chimarrogalobia* and *Gymnomyobia*, which are characterized by four-segmented leg I, that is, by the presence of the tibio-tarsus complex on leg I, and by weak, setiform second claw each on legs. II–IV, are morphologically closer to each other than to the genus *Placomyobia* which has five-segmented leg I and 2 subequal claws each on legs II–IV. This might suggest phylogenetic relations among the three host genera.

Lukoschus and Driessen [5] suggested that a common setation pattern with phylogenetic significance is observed on the idiosoma of larvae of some insectivore-infesting mite genera. The idiosomal setation of larva of *Chimarrogalobia yoshiyukiae* sp. n. is proved to be the same as that of *Amorphacarus parvisetosus* Lukoschus and Driessen, although the ontogenetic change in the setation is different between *C. yoshiyukiae* and *A. parvisetosus*. Setae dorsally on the hysterosoma remarkably decrease in number on the deutonymph and 2 pairs more on the tritonymph in *C. yoshiyukiae*.

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